

## Complete Summary

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### GUIDELINE TITLE

Endoscopic therapy of anorectal disorders.

### BIBLIOGRAPHIC SOURCE(S)

Eisen GM, Dominitz JA, Faigel DO, Goldstein JL, Kalloo AN, Petersen JL, Raddawi HM, Ryan ME, Vargo JJ 3rd, Young HS, Fanelli RD, Hyman NH, Wheeler-Harbaugh J. Endoscopic therapy of anorectal disorders. *Gastrointest Endosc* 2001 Jun; 53(7):867-70. [62 references] [PubMed](#)

### GUIDELINE STATUS

This is the current release of the guideline.

## COMPLETE SUMMARY CONTENT

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## SCOPE

### DISEASE/CONDITION(S)

Anorectal disorders including chronic radiation proctopathy, chronic anal fissure (CAF), and internal hemorrhoids

### GUIDELINE CATEGORY

Assessment of Therapeutic Effectiveness  
 Management  
 Treatment

### CLINICAL SPECIALTY

Gastroenterology  
Surgery

## INTENDED USERS

Physicians

## GUIDELINE OBJECTIVE(S)

To provide recommendations on the appropriate medical, endoscopic, and surgical treatments of anal disorders, including chronic radiation proctopathy, chronic anal fissure (CAF), and internal hemorrhoids

## TARGET POPULATION

Patients with anorectal disorders

## INTERVENTIONS AND PRACTICES CONSIDERED

### Management/Treatment

#### Chronic Radiation Proctopathy

1. Medical therapy (not recommended)
  - Hyperbaric oxygen treatment
  - Sucralfate (oral or enema)
  - Oral sulfasalazine + steroid enemas
  - 5-aminosalicylic acid enemas
  - Butyric acid enemas
2. Laser treatment (Neodymium yttrium aluminum garnet [Nd:YAG], argon, or potassium titanyl phosphate [KTP] laser)
3. Heater and bipolar probes
4. Argon plasma coagulator (APC)
5. Dilute (4%) formalin treatment

#### Chronic Anal Fissures

1. Surgical therapy
2. Botulinum toxin injection
3. Topical therapy with nitroglycerin (NTG)

#### Internal Hemorrhoids

1. Nonsurgical options for hemorrhoidal treatment
  - Sclerotherapy
  - Rubber band ligation
  - Infrared photocoagulation
  - Electrocoagulation
  - Cryotherapy
  - Low voltage direct current (ultroid)
2. Surgical hemorrhoidectomy

## MAJOR OUTCOMES CONSIDERED

- Cessation of rectal bleeding
- Signs and symptoms
- Histology
- Number of treatment sessions required
- Transfusion requirements
- Hematocrit

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

### NUMBER OF SOURCE DOCUMENTS

Not stated

### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

### METHODS USED TO ANALYZE THE EVIDENCE

Review  
Review of Published Meta-Analyses

### DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

### METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

### DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Guidelines for appropriate utilization of endoscopy are based on a critical review of the available data and expert consensus.

#### RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

#### COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

#### METHOD OF GUIDELINE VALIDATION

Not stated

#### DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

### RECOMMENDATIONS

#### MAJOR RECOMMENDATIONS

##### Chronic Radiation Proctopathy

By its fixed nature and close proximity to pelvic organs that are treated with radiation therapy, the rectum is the most common segment of the gastrointestinal tract that is affected with acute and chronic radiation-induced injury, with the latter occurring in up to 20% of patients. The term "radiation proctitis" is a misnomer, as there is no inflammatory component of the disease on biopsy. Characteristically, there is an ischemic endarteritis of the submucosal arterioles, and submucosal fibrosis. Endoscopically, the lesion begins at the dentate line and is composed of diffuse, friable angioectatic lesions. Ulcerations may be present.

Clinical features of radiation-induced proctopathy include varying degrees of hematochezia, tenesmus, diarrhea, and defecatory urgency. Additional complications include stricture formation and fistulization into adjacent organs.

##### Medical Therapy

In a retrospective series, hyperbaric oxygen treatment led to complete cessation of rectal bleeding in 24% of patients following an average of 20 treatment sessions (range 12–40). Two case reports suggest that sucralfate, in either an oral or enema preparation, to be of potential efficacy in the treatment of transfusion dependent rectal bleeding. Sucralfate enemas have been found to be superior to the combination of oral sulfasalazine and steroid enemas in controlling symptoms (94.1% vs. 53.3%), in a prospective, randomized trial. However, the treatment groups included both acute and chronic radiation proctopathy, and the follow up was short. 5-aminosalicylic acid enemas failed to improve symptoms or

the endoscopic appearance of the rectal mucosa in a prospective, open-labeled trial. Similarly, treatment with butyric acid enemas failed to result in significant improvements in symptom, endoscopic, and histologic scores in a randomized, double-blind, placebo-controlled, cross-over trial. In summary, medical therapy does not appear effective.

### Endoscopic therapy

The goal of endoscopic therapy is to ablate the angiectasias with a resultant improvement in the severity and frequency of rectal bleeding. This will lead to an increase in the hemoglobin level, reduction in transfusion requirements, and hopefully, an improvement in quality of life. Candidates for endoscopic therapy include, but are not limited to, patients with chronic hematochezia associated with transfusion dependency. Alternative sources of blood loss should be addressed. Relative contraindications for endoscopic therapy should include evidence of malignant recurrence, stenosis, or fistulae. There currently are no trials comparing medical to surgical therapy.

The neodymium yttrium aluminum garnet (Nd:YAG) laser has been effectively used in the treatment of radiation proctopathy and delivers a deeper tissue effect than the argon and potassium titanyl phosphate (KTP) lasers. A median of three treatment sessions (range 1 to 9) are usually needed to obtain an optimal clinical response. Studies indicate that the Nd:YAG laser treatment leads to a decreased transfusion requirement, correction of anemia, and a reduction in the severity and frequency of bleeding episodes. The argon laser exerts an effect that is more superficial than the Nd:YAG laser. A median of one to three sessions is required for control of bleeding and reduced transfusion requirements. Seventy one percent of patients may require periodic therapy for recurrent angiectasias. In a case series of 23 patients, treatment with the KTP laser resulted in a significant reduction in the frequency of hematochezia and the utilization of health care resources. Significant improvements in the hematocrit and activities of daily life were also noted. A median of two sessions (range 1 to 5) were required.

Both heater probe and bipolar probes are less expensive and more portable than lasers. They also allow for irrigation and tangential treatment. In a prospective study, both bipolar and heater probes were found to be superior to supportive therapy with transfusions in terms of the reduction of severe episodes of bleeding and improvement in hematocrit. No major complications were reported in either treatment group.

The argon plasma coagulator (APC) has been utilized in three case series. Potential advantages of the APC include portability and the ability to apply therapy in extreme tangential locations. In one study, the APC was used in 28 patients with moderately severe rectal bleeding. After an average of 2.9 monthly sessions (range 1 to 8) and a mean follow up of 10 months, a decrease in the severity score for rectal bleeding was noted as well as a mean increase in the hemoglobin level of 1.9 gm/dL among anemic patients. Repeat therapy was needed in two patients. Another study employed the APC in 7 patients with intermittent rectal bleeding and tenesmus. No patient was transfusion dependent. A median of two treatment sessions (range 2 to 4) was used to achieve complete relief of rectal bleeding over a median follow-up period of 24 months. All thermal treatment

methods may create symptomatic ulceration (pain, bleeding), which can require months to resolve.

Dilute (4%) formalin treatment of radiation proctopathy has been applied through a rigid proctoscope under general anesthesia or a nerve block (i.e., anal, pudendal, or spinal). Complete clinical responses range from 81% to 100%. Complications including anal stenosis, mucosal ulceration, and mild fecal incontinence have been reported.

### Chronic Anal Fissure (CAF)

CAF is a common condition that is characterized by pain with defecation. A characteristic triad consisting of the anal fissure itself, a sentinel pile or tag, and a hypertrophic anal papilla at the distal end of the fissure is seen on examination. Fissures are always in the 6 and 12 o'clock position except in inflammatory bowel disease. The etiology of CAF is multifactorial, but it appears that hypertension of the internal anal sphincter plays an important role. Surgical therapy aimed at reducing sphincter tone is successful in 85 to 95% of patients but permanently weakens the internal anal sphincter and can be associated with incontinence, infection, and anal deformity. The reported incidence of postsurgical incontinence may be as high as 35%. Multiparity, previous surgery, and constipation may be risk factors. Fiber supplements have been found to be of benefit in the healing, preventing the recurrence of acute anal fissures, but there is no data suggesting that such a measure is efficacious in CAF.

Chemical denervation of gastrointestinal smooth muscle with botulinum toxin A injection has been previously demonstrated in patients with achalasia.

Case series utilizing botulinum toxin injection for CAF have demonstrated healing rates of up to 83% at three months following therapy. Temporary, mild fecal incontinence and perianal thrombosis have been reported. A minority of patients have experienced clinical relapses which have responded to a second course of therapy. In a double-blind, placebo-controlled trial, the injection of 20 units of botulinum toxin into the internal anal sphincter led to significantly fewer symptoms and a higher healing rate. No relapses were noted over an average follow-up period of 16 months.

Topical therapy with nitroglycerin (NTG) has been suggested because nitric oxide is the mediator of neurogenic relaxation of the internal anal sphincter. The current data on the efficacy of NTG is conflicting. A single center, randomized, prospective, double-blind trial, found that the application of 0.2% NTG ointment twice a day was superior to placebo in terms of healing at eight weeks (68% vs. 8%,  $p < 0.0001$ ). However, a multicenter, randomized, placebo-controlled, double-blind trial failed to confirm this finding. An important limitation of NTG therapy is the treatment-related headache, which is dose-related and occurs in 19 to 75% of patients.

In a prospective trial, 50 patients with CAF were randomized to receive either 20 units of botulinum toxin or 0.2% NTG applied twice daily for six weeks. At eight weeks, the healing rate was significantly higher in the group who received botulinum (96% vs. 60%,  $p = 0.005$ ). Five patients in the nitroglycerin group

experienced treatment-related, transient headaches. None of the patients in the botulinum toxin group experienced adverse effects.

## Internal Hemorrhoids

Over 75% of persons in the United States have hemorrhoids at some time during their life. Fifty percent of patients over 50 years require some type of therapy. Symptoms attributable to hemorrhoids affect up to 25% of the adult population in the United States, and include: bleeding, pruritus, prolapse, swelling, pain, and discharge. The various nonsurgical options for hemorrhoidal treatment include sclerotherapy, rubber band ligation, infrared photocoagulation, electrocoagulation, cryotherapy, and low voltage direct current (ultroid). Despite a number of randomized, comparative trials, no single therapy has been shown to be consistently superior. Moreover, some of the trials may have lacked the statistical power to demonstrate any true differences. Surgical hemorrhoidectomy is the treatment of choice for all fourth degree hemorrhoids, strangulated hemorrhoids, and those that have not been successfully treated by other forms of therapy.

Relative contraindications for the nonsurgical treatment of internal hemorrhoids include the presence of inflammatory bowel disease, rectal prolapse, infectious or neoplastic processes, immunodeficiency disorders, coagulopathy, and pregnancy or the immediate postpartum state.

Two meta-analyses have compared various nonoperative treatments for hemorrhoids. One study compared the efficacy and complications of infrared coagulation, injection sclerotherapy, and rubber band ligation, by utilizing data from five prospective trials involving 747 patients with first degree and second degree hemorrhoids, and a minimum follow up interval of 12 months. The treatment response for patients receiving infrared coagulation and rubber band ligation were equivalent at twelve months (41.6% vs. 42.7%). Patients in the band ligation group experienced significantly more posttreatment pain (19.9% vs. 3.5%,  $p=0.02$ ). Treatment with infrared coagulation was associated with significantly more treatment sessions for recurrence of symptoms (15.5% vs. 5.3%). Both modalities were equivalent in the treatment of first- and second-degree hemorrhoids. At 12 months posttreatment, the symptomatic response rate associated with rubber band ligation and sclerotherapy were the same (36.8% vs. 25.1%,  $p=0.07$ ). Significantly more patients in the sclerotherapy group required additional therapy due to symptomatic recurrence (22.8% vs. 8.6%). Stratification by hemorrhoid severity revealed a similar response rate for first-degree hemorrhoids. The response rate for rubber band ligation was significantly better than sclerotherapy.

In another meta-analysis, surgical hemorrhoidectomy was compared to band ligation. Though surgical intervention led to a better symptomatic response (96% vs. 87.5%,  $p=0.001$ ), band ligation was superior in terms of a lower complication rate (17.6% vs. 5.9%,  $p=0.02$ ) and less posttreatment pain (82.1% vs. 9.8%,  $p<0.001$ ).

## Summary

In summary, the current nonsurgical and endoscopic management of chronic radiation proctopathy, chronic anal fissure, and internal hemorrhoids has been

presented. In the case of radiation proctopathy, further prospective randomized trials are needed to assess the various treatment modalities outlined for clinical efficacy and cost effectiveness. Botulinum toxin has emerged as an important nonsurgical option in the treatment of uncomplicated chronic anal fissures. Rubber band ligation is superior to injection sclerotherapy in the treatment of internal hemorrhoids. Infrared photocoagulation requires more treatment sessions than rubber band ligation but leads to significantly less posttreatment pain. Further prospective, randomized studies are needed to compare rubber band ligation and infrared photocoagulation to other modalities such as cryotherapy, bipolar diathermy, heater probe, and low voltage direct current.

#### CLINICAL ALGORITHM(S)

None provided

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

### BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

#### POTENTIAL BENEFITS

Appropriate use of endoscopic therapy for anorectal disorders

#### POTENTIAL HARMS

##### Chronic Radiation Proctopathy

- All thermal treatment methods may create symptomatic ulceration (pain, bleeding), which can require months to resolve.
- Dilute (4%) formalin treatment of radiation proctopathy has been applied through a rigid proctoscope under general anesthesia or a nerve block (i.e., anal, pudendal, or spinal). Complications including anal stenosis, mucosal ulceration, and mild fecal incontinence have been reported.

##### Chronic Anal Fissure

- Surgical therapy aimed at reducing sphincter tone is successful in 85 to 95% of patients with chronic anal fissure (CAF) but permanently weakens the internal anal sphincter and can be associated with incontinence, infection, and anal deformity. The reported incidence of postsurgical incontinence may be as high as 35%. Multiparity, previous surgery, and constipation may be risk factors.
- In a case series utilizing botulinum toxin injection for CAF, temporary, mild fecal incontinence and perianal thrombosis have been reported.
- An important limitation of nitroglycerin (NTG) therapy is the treatment-related headache, which is dose-related and occurs in 19 to 75% of patients.



## CONTRAINDICATIONS

### CONTRAINDICATIONS

#### Chronic Radiation Proctopathy

Relative contraindications for endoscopic therapy should include evidence of malignant recurrence, stenosis, or fistulae.

#### Internal Hemorrhoids

Relative contraindications for the nonsurgical treatment of internal hemorrhoids include: the presence of inflammatory bowel disease, rectal prolapse, infectious or neoplastic processes, immunodeficiency disorders, coagulopathy, and pregnancy or the immediate postpartum state.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

The information in this guideline is intended only to provide general information and not as a definitive basis for diagnosis or treatment in any particular case. It is very important that individuals consult their doctor about specific conditions.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Eisen GM, Dominitz JA, Faigel DO, Goldstein JL, Kalloo AN, Petersen JL, Raddawi HM, Ryan ME, Vargo JJ 3rd, Young HS, Fanelli RD, Hyman NH, Wheeler-Harbaugh

J. Endoscopic therapy of anorectal disorders. Gastrointest Endosc 2001 Jun; 53(7):867-70. [62 references] [PubMed](#)

#### ADAPTATION

Not applicable: The guideline was not adapted from another source.

#### DATE RELEASED

2001 Jun

#### GUIDELINE DEVELOPER(S)

American Society for Gastrointestinal Endoscopy - Medical Specialty Society

#### SOURCE(S) OF FUNDING

American Society for Gastrointestinal Endoscopy

#### GUIDELINE COMMITTEE

Standards of Practice Committee

#### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

#### GUIDELINE STATUS

This is the current release of the guideline.

#### GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the [American Society for Gastrointestinal Endoscopy \(ASGE\) Web site](#).

Print copies: Available from the American Society for Gastrointestinal Endoscopy, 1520 Kensington Road, Suite 202, Oak Brook, IL 60523

#### AVAILABILITY OF COMPANION DOCUMENTS

None available

## PATIENT RESOURCES

None available

## NGC STATUS

This NGC summary was completed by ECRI on October 18, 2004. The information was verified by the guideline developer on November 5, 2004.

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